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**PACIFIC**  **TELESIS**  
Group-Washington

EX PARTE OR LATE FILED

October 16, 1995

**EX PARTE**

William F. Caton  
Acting Secretary  
Federal Communications Commission  
Mail Stop 1170  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

RECEIVED

OCT 16 1995

DOCKET FILE COPY ORIGINAL

Dear Mr. Caton:

Re: MM Docket No. 94-131 - Amendment of Parts 21 and 74 of the Commission's Rules with  
Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional  
Television Fixed Service; and PP Docket No. 93-253 / Implementation of Section 309(j) of  
the Communications Act-Competitive Bidding

On October 13, 1995, Lee J. Tiedrich, Esq., of Covington & Burling and I met with Jane Mago, Lisa B. Smith, Senior Legal Advisor to Commissioner Rachelle B. Chong; Rudolfo M. Baca, Legal Advisor to Commissioner James H. Quello; and David R. Siddall and Mary P. McManus, Legal Advisor to Commissioner Susan Ness, to discuss matters filed in the Pacific Telesis Enterprise Group and Cross Country Wireless, Inc. (collectively "Pacific") Petition for Reconsideration and Clarification, Opposition, Reply, Supplement to Reply, and September 13, 1995 ex parte in the above-referenced proceedings. In addition, Ms. Tiedrich, Kurt Wimmer, Esq., of Covington & Burling, and I met with Peter A. Tenhula, Special Counsel, Office of General Counsel, to discuss these same issues. Please associate the attached materials, which were given to Ms. Mago, with the above referenced proceedings.

We are submitting two copies of this notice in accordance with Section 1.1206(a)(1) of the Commission's Rules.

Please stamp and return the provided copy to confirm your receipt. Please contact me should you have any questions or require additional information concerning this matter.

Sincerely,

GINA HARRISON / Afc

Attachments

cc: Jane Mago  
Peter Tenhula

No. of Copies rec'd  
List ABCDE

041

October 2, 1995

Statement of Paul R. Milgrom

1. My name is Paul R. Milgrom. I am the Shirley and Leonard Ely, Jr. Professor of Humanities and Sciences and Professor of Economics at Stanford University in Stanford, California, 94305.

2. I received an A.B. degree in Mathematics from the University of Michigan and an M.S. in Statistics and a Ph.D. in Business from Stanford University. My academic specialty is microeconomic theory and comparative economic institutions. From 1990-1994, I was coeditor of the *American Economic Review*. I have also served on the editorial boards of several other economics journals. I am the author of more than sixty books and articles and have been the recipient of numerous awards and honors, including Fellowships in the American Academy of Arts and Sciences and in the Econometric Society. I have also received Fellowship grants from the John Simon Guggenheim Foundation, the Center for Advanced Study in the Behavioral Sciences, and the Center for Advanced Studies in Jerusalem. My curriculum vitae is attached.

3. Since November of 1993, I have filed ten affidavits or statements with the Federal Communications Commission regarding auction or spectrum-related matters (including two that were co-authored with my colleague, Stanford Professor Robert Wilson). I acted as an adviser to Pacific Telesis Mobile Services during auction #4 of broadband PCS licenses at which the company acquired licenses to serve the Los Angeles and San Francisco major trading areas. In 1994, I filed an affidavit in connection with the motion to terminate the MFJ. In 1984, when the MFJ precipitated a restructuring of certain contracts between AT&T and the Southern New England Telephone Company (SNET), I advised SNET about the renegotiation of its contracts.

4. My other experience with regulatory matters includes testimony given to the Federal Energy Regulatory Commission concerning pricing on the Trans-Alaska pipeline, testimony at trial concerning the economics of the insurance contracting, and written testimony concerning environmental regulation filed with the National Oceanographic and Atmospheric Administration (NOAA).

5. I have been asked by Pacific Telesis to comment on the rules for determining which small businesses should qualify for special financial treatment during the MDS auction and how the rules are likely to affect economic efficiency.

6. The primary economic rationale for bidding credits and special financing arrangements lies in the presumed inability of smaller businesses to raise the funds necessary to compete in a particular business, despite other qualifications to compete. To the extent this presumption is complete and correct, a system of credits and license financing arrangements for small businesses competing in the auctions can help to avoid excessive concentration of economic activity in a few large firms while doing little or no damage to the efficient operation of licenses in the new wireless markets.

7. In order to have this desired effect, however, the preferences need to be carefully tailored and targeted so that they benefit only those businesses for which financing constraints are significant. One of the lessons of auction #3 — the regional narrowband auction of October, 1994 — is that a too-widely targeted credit can be self-defeating. In that auction, the designated entity (DE) bidders were unable to benefit from their 40% bidding credit. Encouraged by the bidding credit, they bid so aggressively against one another that the net prices they paid were just as high as those paid by the other bidders. The result was that the license assignments and prices were probably the same as if no credit had been offered at all. A credit based on more restrictive qualification rules would have been more likely to assign licenses to and reduce the prices for financially disadvantaged bidders.

8. Generally, a too inclusive a standard for small businesses preferences can be counter-productive in several ways. First, compared to a more narrowly targeted standard, a too inclusive standard makes it less likely that the smallest businesses that are actually disadvantaged will acquire licenses. For by providing the same credits to larger, advantaged bidders, it cancels any advantage created by the credits for smaller bidders. Second, if a genuine small bidder does acquire licenses at auction, a too inclusive standard increases the likely price that it must pay. The

reason is that the auction price is set by the amount that the losing bidder is willing to pay, which will be raised to the extent of the losing bidder's credit. Finally, in competition between intermediate sized businesses and larger businesses, where neither has actual problems financing an investment in MDS, a credit may result in the license being awarded to the intermediate sized bidder even when it has higher costs and lesser capabilities. If that happens, consumers would be among the main losers.

9. At present, the public companies offering wireless cable services all have average gross revenues for 1992-1994 of under \$11 million. Using a \$40 million average revenue rule to define a small business as WCAI advocates, only Cross Country Wireless, on account of its affiliation with Pacific Telesis, would currently fail to qualify (though changing business alliances may alter this in the future).

10. The existing MDS companies qualifying as small businesses under the \$40 million standard include many that have no difficulty raising public debt and equity capital. Partly, this is because the three year average revenue standard is misleading in an industry like MDS in which the growth is rapid. Whatever the reason, the recent successes of these companies in raising hundreds of millions of dollars in capital testifies to their ability to access the capital markets.<sup>1</sup>

11. This is an industry in which there are many local markets in which genuinely small businesses could potentially provide standalone services to local customers. Unlike companies providing PCS and other mobile radio services, there is much less need for wireless cable companies to assemble large geographic blocks or to coordinate with other suppliers to provide

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<sup>1</sup>In 1995 alone, PCTV had a debt offering of \$175 million, Heartland had a debt offering of \$100 million, Videotron had a debt offering of \$150 million, CAI got \$100 million in debt capital from Bell Atlantic and NYNEX, and Boston Ventures invested \$35 million in Wireless Broadcasting System. This is in addition to 1994 financing of \$50 million for PCTV from Blackstone, \$40 million for Heartland from Jupiter Partners, and a \$100 million debt offering for American Telecasting. Sources: (1) *The Wireless Cable Industry*, Alex Brown & Sons, report, June 27, 1995, (2) *The 1995 Wireless Cable Databook*, Paul Kagan Associates.

“roaming” services. There may be many business opportunities for small companies to provide wireless cable service to customers in small and medium sized local markets. However, setting the MDS small business revenue standard at \$40 million would fail to provide the necessary encouragement for small new entrants with limited access to capital markets.

12. To achieve the economic objective described in paragraph 6, bidding credits should be limited to those who are expected to have difficulty financing their MDS investments from internal sources of funds. The need for service-specific standards that reflect the required levels of investment has been repeatedly acknowledged by the Commission. The appropriate size standard for small MDS businesses can be set in reference to the standard used for other auctions using estimates of investment costs for various kinds of service.

11. The infrastructure cost estimates used for my analysis are shown in the table on the next page. The sources on which I rely are indicated in the footnotes on the next page. The MDS cost estimates are based on developing systems with investments that are suitable to small, medium and large markets, with analog systems using perhaps twelve channels for the smallest markets, analog systems using perhaps 30 channels for medium markets, and high capacity digital systems for dense metropolitan markets like Los Angeles. The largest investments are beyond the reach of most small businesses.

12. In developing these figures, I have excluded the cost of MDS customer premises equipment. Such equipment can often be vendor-financed. Moreover, the equipment costs are incurred only as customers are added, which puts these costs in a different and less problematic category than fixed infrastructure investments. For better comparability, the other cost estimates also exclude phones, pagers and other equipment in the hands of the customers.

Infrastructure Cost Estimates

Service Type	Per pop	Typical Total	Small Business Revenue Threshold
PCS-Broadband	\$15.00-30.00 <sup>2</sup>	\$10-200 million	\$40 million
PCS-Narrowband	\$0.06-0.22 <sup>3</sup>	\$3.5-11.0 million	\$40 million
900 MHz SMR	\$.10-.15 <sup>4</sup>	\$0.6-4.0 million	\$3 and \$15 million <sup>5</sup>
MDS - Small market <sup>6</sup>	\$3.75	\$0.75 million	?
MDS - Med market	\$1.23	\$1.1 million	?
MDS - Los Angeles	\$1.30	\$13.0 million	NA

12. It appears that one can rationalize the Commission's previous decisions about the small business threshold using a ratio of three-year-average revenue to the investment required for a typical small system of four to one and cost estimates similar to those reported in the table. The ratio of four to one corresponds to estimated infrastructure investments of \$10 million for a PCS broadband license for a single MTA or BTA, \$10 million for a regional narrowband system, and \$0.75 to \$3.75 million for a 900 MHz SMR system. A comparable standard in which

<sup>2</sup>These are analysts' estimates as reported in the *Wall Street Journal* by Gautam Naik and Daniel Pearl on March 14, 1995. Pacific Bell Mobile Services has estimated \$21.00/pop for these costs.

<sup>3</sup>The \$3.5 million figure is the FCC's own initial estimate of building out a regional paging system, as reported in footnote 40 of the Third Competitive Bidding Report and Order. The \$0.22 per pop (\$11 million total) estimate is based on a report by Paul Kagan Associates. I have used its cost estimates for the Motorola FLEX system, because Kagan reports that technology "is already considered the technology of choice." Total build-out costs vary less among narrowband licenses than licenses for other services because regions were defined to reduce population variations. Each of the five narrowband regions has a population of about 50 million.

<sup>4</sup>In the *Second Order on Reconsideration and Seventh Report and Order* released September 14, 1995, ¶150, the Commission cites an SBA estimate that the cost of building a system to serve an MTA "could range between \$500,000 and \$750,000," which understates the likely variation. Dividing these figures by the average MTA figure of 5 million pops yields the cost/pop figure reported here. The typical total costs results from multiplying the cost/pop by a range of MTA population sizes.

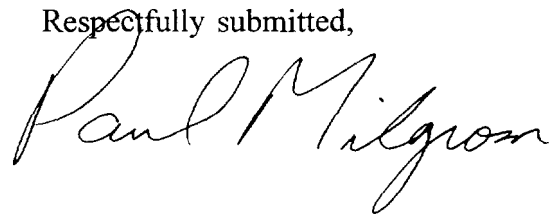
<sup>5</sup>The FCC adopted a two-tier system for this service. For the smallest bidders, winning bids will be discounted by 15%, initial deposits are just 10% of the price, and financing is five-year interest only with the balance payable over the remaining license term. For the next tier, winning bids will be discounted by 10%, initial deposits are 10%, financing is two-year interest only with the balance payable over the remaining license term.

<sup>6</sup>All MDS cost estimates were supplied by Pacific Telesis.

a small business was expected to purchase a single license to serve a small- or medium-sized MDS market and to make the corresponding investment would lead to a revenue standard of between \$3.0 million and \$4.5 million. Such a standard would allow genuine small businesses to compete for licenses on terms similar to those established by the Commission for broadband, narrowband, and 900 MHz specialized mobile radio.

13. In summary, to be effective, a bidding credit must be targeted narrowly to the smallest businesses that could serve the desired markets. In this case, the small business thresholds used for auctions of other services support are consistent with setting a threshold for a small MDS business in the range of \$3.0-4.5 million.

Respectfully submitted,

A handwritten signature in black ink, reading "Paul Milgrom". The signature is written in a cursive, flowing style with a large initial "P" and "M".

September 13, 1995

Dear Messrs. Stewart and Pepper:

Recently, representatives of Pacific Telesis Enterprises visited with various FCC staff members, including yourselves, to introduce ourselves in the context of (1) our determination to operate a state-of-the-art (in terms of technology and programming) wireless cable service in southern California and (2) the MDS auction proceeding (MM Docket. 94-131 and PP Docket. 93-253).

In various of those meetings, we made the point, reflected in our petition for reconsideration and clarification filed in that proceeding, that the benchmark for qualifying for designated entity bidding privileges should be substantially lowered. We supported that position with two arguments. First, we pointed out that the capital requirements for wireless cable are a fraction of what they were for broadband PCS; yet the designated entity benchmark is proposed to be the same. Exhibit A hereto further documents that point. See also "Wireless Sale Winners", *Wall Street Journal* (March 14, 1995), Exhibit C attached.

Second, we urged that an unduly high benchmark would frustrate the purpose of the designated entity policy. Exhibit B hereto documents that point, showing among other things, that all publicly traded wireless cable operators would qualify, except us and potentially CAI Wireless/ACS Wireless, subject to investment by BANX, a joint venture of Bell Atlantic and Nynex. Therefore, the truly small operator would receive no comparative advantage under a designated entity program that included the currently specified \$40 million benchmark.

If you have any questions about this information, please do not hesitate to contact the undersigned.

Respectfully submitted,



Thomas McKeever  
Manager, Strategic Planning  
Pacific Telesis Enhanced Service

**Exhibit A - MMDS Infrastructure Costs/pop vs. PCS Infrastructure Costs/pop**

<b>System Components</b>	<b>Infrastructure Cost/Pop</b>	
	<b>MMDS</b>	<b>Broadband PCS</b>
Satellite Receivers	\$0.10	-
Routing Equipment*	0.20	-
Digital Encoding Equipment	0.70	-
Switching Equipment	0.04	\$1.40
Software and Near Video on Demand Server	0.10	-
Towers, Antennas, Racks etc.	0.03	-
Modulation Equipment	0.02	-
Site Acquisition/Preparation	0.10	4.70
Base Station & Controllers	-	11.10
Microwave Relocation	-	1.90
Other	-	2.00
<b>Total Infrastructure Cost</b>	<b>\$1.30</b>	<b>\$21.00</b>

**Notes:**

Pop = potential subscribers, corresponds to population of approximately 11.8 million for Los Angeles and Orange County in 1994.

PCS infrastructure costs and pops (potential subscribers) correspond to the Los Angeles market.

MMDS infrastructure costs and pops correspond to the combined Los Angeles and Orange County market.

\* Routing Equipment includes components such as microwave transmitters, fiber routing, transmitters, repeaters.

# Exhibit B - Public Company Statistics

	Gross LOS HH (4/95E) (000s) (a)	Subscribers (3/31/95) (000s) (a)	3 yr. Avg Rev 1992-1994 (in 000s) (b)	Gross Revenue 1995E (a)	Gross Revenue 1994 (000s) (b)	Gross Revenue 1993 (000s) (b)	Gross Revenue 1992 (000s) (b)
ACS Enterprises	2,700	78.7	\$9,631	NA	\$17,739	\$6,490	\$4,664
CAI Wireless	7,721	32.9	NA	5,147 c	\$918 d	NA	NA
CAI Wireless/ACS Enterprises	12,454 e	113.6 e	NA	16,778 e	18,513 e	NA	NA
American Telecasting	5,340	127.5	10,780	NA	21,629	7,178	3,534
CableMaxx	1,375	32.7	5,145	NA	7,709	4,553	3,172
Heartland Wireless	6,061	31.1	1,101	19,263	2,229	869	205
People's Choice	4,502	54.1	7,442	NA	12,557	5,780	3,989
Preferred Entertainment	2,275	22.2	3,348	NA	4,583	2,781	2,679
Wireless Cable of Atlanta	4,012	17.0	NA	NA	2,869	2,249	NA
Cross Country Wireless (f)	650	42,000	13,891	NA	16,136	14,751	10,787

## Notes:

LOS = Line of Sight

HH = Household

E = estimated

a. Source: Gerard Klauer Mattison & Co.

b. Based on financial data taken from latest Company SEC 10K filings.

c. Data for the year end March 31, 1995. Source: SEC 10K filing 3/31/95

d. Data for the seven-month period ended March 31, 1994. Source: SEC 10K filing 3/31/95

e. Pro forma to include acquisition of ACS Enterprises and Baltimore, Pittsburgh and Washington markets.

f. Cross Country Wireless is now a wholly owned subsidiary of Pacific Telesis.

## **Wireless Sale Winners Include AT&T, Sprint 'Personal Communications Services' Auction Ends; Bids Topped \$7 Billion**

By Gautam Naik and Daniel Pearl

The Wall Street Journal

03/14/95

The federal government's high-stakes auction of licenses to offer a new generation of wireless "personal communications services" ended yesterday with a few telecommunications giants pledging the lion's share of more than \$7 billion in final bids.

The biggest winners included Sprint Corp.'s partnership with three big cable operators; AT&T Corp.; a consortium of three Baby Bells and AirTouch Communications Inc. of San Francisco; and Pacific Telesis Group, the California regional Bell company.

The auctions will spur the construction of at least three competing coast-to-coast wireless networks, which could lower prices of cellular service and allow consumers to place calls and zap data messages over the airwaves in about three years.

"We're pleased as punch" with the outcome of the auctions, said Reed Hundt, chairman of the Federal Communications Commission, which won kudos for its handling of the auction rules and procedures. The success of the auctions, in fact, could embolden the FCC to auction other licenses for taxicab-dispatch services, video services and telephone numbers, Mr. Hundt said. The chairman said he'd like to have the FCC act as "the federal auction commission."

Sprint and its cable partners, including Tele-Communications Inc., Cox Enterprises Inc. and Comcast Corp., were the top bidders, ponying up a total of \$2.11 billion for 29 markets, including the prized New York market. The team's strategy was to win licenses in markets where the partners already had major cable holdings.

"We want to turn cable into local phone service" and offer about 180 million potential customers one-stop shopping for telephone and video services, said Gary Forsee, interim chief executive officer of the Sprint-cable team.

AT&T was the second-highest bidder, and it put up \$1.68 billion to fill out the reach of McCaw Cellular Communications Inc., which it acquired last year. In landing licenses for 21 markets, AT&T more than doubled its potential customer base for wireless services to 200 million people, or 80% of the U.S.

"This enables us to build a nationwide network" and begin offering services in several key markets by 1997, said Steven Hooper, president of McCaw. AT&T plans to extend its coverage by

allying with small businesses, women, minorities and rural companies, which begin bidding on special set-aside licenses in about six weeks.

The third-highest bidder, a team made up of Nynex Corp., Bell Atlantic Corp., U S West Inc. and AirTouch, bid a total of \$1.11 billion for 11 markets, including Chicago, Dallas and Miami, filling in key gaps in the team's current cellular holdings. The partnership plans to begin offering new PCS services within 18 months and to complete a nationwide network in two years, said George Schmitt, president of the partnership.

Pacific Telesis agreed to pay a similarly lofty sum for just two markets, bidding \$696 million to win a ferocious bidding war for the Los Angeles and San Francisco license with wireless entrepreneur Craig O. McCaw.

Those lofty dollar figures, however, cover only the cost of the license, and the winners will have to spend billions more to actually build the wireless networks. To construct the new  
✓ all-digital networks, PCS carriers will have to spend anywhere from \$15 to \$30 per potential customer, according to analysts' estimates. Thus the Sprint-cable team could be expected to invest another \$2.7 billion to \$5.4 billion beyond the cost of the license before it can offer extensive service to all customers.

PCS bidders must now lease or acquire thousands of sites for constructing PCS radio "cells," often in the face of objections from local zoning boards and neighborhood groups. They also must persuade dozens of utilities and other companies currently using the PCS part of the radio spectrum to migrate to other frequencies. "It's a logistical challenge," said Mr. Forsee.

While the PCS auctions may be good news for price-conscious consumers, the players could suffer. As many as seven wireless carriers, including two incumbent cellular operators, are expected to compete for new subscribers, possibly triggering fierce price wars and lower revenue per subscriber.

"The ferociousness of the bidding will be followed by equally ferocious competition, and some players could go extinct," said Carl R. Aron, analyst at EDS Management Consulting Services. He warns of a "coming wireless ice age" resulting from too many players and intense competition.

Three companies, Cox Enterprises, Omnipoint Corp. and American Personal Communications Inc., have an edge: they previously received cheaper "pioneer preference" licenses for PCS services. Cox Enterprises would get a Los Angeles license for almost half as much as Pacific Telesis had to pay, and American Personal Communications

would pay less than half the price AT&T has offered for a license in Washington D.C.

Senate Majority Leader Robert Dole (R., Kan.), has been critical of the pioneer awards, and some rival bidders, including PacTel, may push for a change requiring the three companies to pay more than the combined \$700 million they would have to pay under current terms.

The winners of the 99 PCS licenses have until March 20 to turn over a down payment equal to 20% of their high bids to the U.S. Treasury; the remainder is due when the licenses are issued in about three months.

#### Auction Wrap-Up: Top PCS bidders

- Wireless Co. L.P. (Sprint Corp. and three cable companies): \$2.11 billion for 29 markets, including New York, San Francisco, Detroit, Dallas, Boston.

- AT&T Corp.: \$1.68 billion for 21 markets, including Chicago, Detroit, Charlotte, Boston and Philadelphia.

- PCS Primeco (Bell Atlantic Corp., Nynex Corp., U S West Inc. and Airtouch Communications): \$1.11 billion for 11 markets including Chicago, Dallas, Tampa, Houston and Miami.

- Pacific Telesis Group: \$696 million for Los Angeles and San Francisco.